



# West Nile Virus MMCA Position Statement

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## West Nile Virus Response: Experts Promote Action To Reduce Risk To Humans

The Michigan Mosquito Control Association has observed with growing concern the lack of response of many state and local agencies to the emergence of West Nile Virus (WNV) in Michigan during 2001 and 2002. Frequent past statements by health officials claim that mosquito control efforts are ineffective and that they are harmful to humans and the environment.

While there can never be 100% guaranteed protection, mosquito control has been shown to effectively reduce the incidence of disease time and time again. One only has to look at history to be reminded of the conquest of yellow fever in building the Panama Canal or its elimination from Havana, Cuba or the eradication of malaria from many European countries. In a 1966 outbreak of St. Louis Encephalitis in Dallas, Texas, 1 out of 167 *Culex* mosquitoes tested positive. After ULV adulticide spraying mosquito counts dropped to near zero for almost a week and then recovered slowly (there was no larvicide program). Gary A. Mount, from the Center for Medical, Agriculture, and Veterinary Entomology, Agriculture Research Service of the U.S. Department of Agriculture did an excellent review of Ultra-low volume aerosols of insecticides applied with vehicle mounted spray units for adult mosquitoes. This review was published in the September 1998 issue of the Journal of the American Mosquito Control Association 14(3):305-334. One of his conclusions from this study was that "Results of field tests in open to moderately open terrain, during favorable meteorological conditions, indicate that ULV insecticidal aerosol application rates produced 90% or more control of *Anopheles*, *Culex*, And *Psorophora* species below or equal to maximum U.S. EPA label rates". A review of literature would easily produce over 2,000 articles in various peer-reviewed international scientific journals over the past 40 years that have documented statistically significant

reductions in mosquito populations after adulticide applications. Based on the biology of West Nile Virus, any reduction in mosquito populations absolutely equals a reduction in human risk!

Concerns about the safety of modern mosquito control insecticides and techniques is based more upon irrational and emotional fear of poisons than reasoned or scientific evidence. In regards to exposure to pesticides during mosquito control spraying the Environmental Protection Agency states on its web site <http://www.epa.gov/pesticides/citizens/pesticides4mosquitos.htm> "Generally, there is no need to relocate during mosquito control spraying. The pesticides have been evaluated for this use and found to pose minimal risks to human health and the environment when used according to label directions". EPA states that these products do not pose unreasonable risks, they base this upon years of scientific data from toxicologists, chemists, physicians and other public health professionals.

The media has often quoted health officials who claim that Michigan residents will become immune to West Nile Virus in the next few years. Some even encourage people to expose themselves to mosquitoes to assist in developing immunity.

In truth, this is poor advice and even dangerous. A brief look at history in Europe and Africa illustrate this point. WNV was initially detected in the area that was to become Israel in the 1940's. Since then Israel has experienced numerous outbreaks with the last major outbreak in 2000 resulting in 417 cases and 35 fatalities. In 1999 southern Russia experienced a widespread outbreak of WNV, with a reported 1000 cases and 40 deaths. Although the people of Russia and Israel have been exposed to WNV for many years it is apparent that the populations of these countries are still very susceptible to WNV.

In the United States, WNV was first discovered in 1999 in New York which resulted in 62 human cases and 7 deaths. Since then WNV in New York has resulted in the following number of human cases: 2000-14 cases, 0 deaths; 2001-15 cases, 2 deaths; and 2002-74 cases, 5 deaths. It appears that people in New York continue to be susceptible to WNV four years after its introduction.

The elderly continue to be the primary affected age group for WNV. If widespread immunity in humans did occur, then you would expect to see a shift to younger age groups in the infected category; but this hasn't happened. For a zoonotic disease, human immunity cannot be relied upon as a control measure. Vector control is a logical option that will provide results.

The Centers for Disease Control has established guidelines for communities who have WNV. This document: Epidemic/Epizootic West Nile Virus in the United

States: Revised Guidelines for Surveillance, Prevention, and Control can be located on their web site at:

<http://www.cdc.gov/ncidod/dvbid/westnile/resources/wnv-guidelines-apr-2001.pdf>

These guidelines suggest that communities strongly consider adult mosquito control if WNV has been confirmed in a horse and/or human, or moderate WNV activity has been detected in birds and/or mosquitoes. If a community has a high dead bird density, high mosquito infection rates, and horse or human cases the recommendation is to implement adult mosquito control programs to target areas of potential human risk. If a community has multiple confirmed human cases then the response should be to implement or intensify emergency adult mosquito control programs. If the outbreak is widespread and covers multiple jurisdictions, consider widespread aerial spraying as per the WNV Emergency Contingency Plan.

As with disease itself, no level of control can guarantee 100% elimination of mosquito populations, but as mentioned earlier, any level of reduction has an impact on disease risk. When a community has WNV, the most appropriate action to protect public health is to control mosquitoes. The only way to break the disease cycle is to kill the mosquitoes that are transmitting the disease. Mosquitoes can be controlled effectively with minimal impact on humans and the environment, while reducing the risk of WNV to humans.

For further information on mosquito control please visit the following web sites.

**American Mosquito Control Association:** <http://www.mosquito.org/>

**Michigan Mosquito Control Association:** <http://www.mimosq.org/>